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(88) Date of publication of the international search report:

29 July 2004

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/25677

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : E21B 23/00; F16L 25/00		
US CL : 166/207,380; 285/333		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
U.S. : 166/207,380,206,313,381,242.6; 285/333,53; 403/179,273		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 2003/0067166 A1 (SIVLEY, IV) 10 April 2003 (10.04.2003), whole document.	1-4
A	US 5,314,014 A (TUCKER) 24 May 1994 (24.05.1994), whole document.	1-4
A	US 4,614,233 A (MENARD) 30 September 1986 (30.09.1986), whole document.	1-4
A	US 3,520,049 A (LYSENKO et al) 14 July 1970 (14.07.1970), whole document.	1-4
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
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"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search	Date of mailing of the international search report	
12 December 2003 (12.12.2003)	21 MAY 2004	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer David J. Baggett Telephone No. (703) 308-1113	

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INTERNATIONAL SEARCH REPORT

PCT/US03/25677

Continuation of B. FIELDS SEARCHED Item 3:
JPO, EPO, Derwent

Terms: sleeve, tubular, expansion/expand, magnetic, impulse/impulsive